

Appl. No. 10/605,646  
Amdt. dated October 28, 2005  
Reply to Office action of July 28, 2005

**Amendments to the Claims:**

1. (currently amended) A method for increasing the size of an internal memory in a processor, wherein the internal memory comprises a conventional internal memory, the method comprising:

5

- (a) providing an extended internal memory in the processor, wherein the conventional internal memory and the extended internal memory are in a same block of memory, and

10

- (b) adding bits to stack addresses with a stack pointer generator so that the processor is capable of accessing memory addresses larger than ~~the bit a data~~ width of a command set of the processor, and ~~can use the extended memory as a stack.~~ use the extended internal memory as a stack, wherein the stack data stored in the extended internal memory is accessed by pushing data onto and popping data from the stack when the stack pointer initially points to any memory address of the conventional internal memory.

15

- 20 2. (currently amended) The method of claim 1 further comprising:

- (e) adding bits to data addresses and register addresses  
with an address extender.

3. (currently amended ) The method of claim 1 wherein adding bits to the stack addresses with the stack pointer generator ~~the step (b) further comprising~~ comprises providing a high stack address, and storing the extra bits in the high stack address when the stack address exceeds the limit of the conventional internal memory.

25

Appl. No. 10/605,646  
Amdt. dated October 28, 2005  
Reply to Office action of July 28, 2005

4. (original) The method of claim 1 wherein the processor is a MCS series processor.
5. (original) The method of claim 1 wherein the CPU processes an 8-bit command set.
- 5
6. (withdrawn) The method of claim 1 wherein the conventional memory and the extended memory are in a same block of memory.
7. (currently amended) The method of claim 5 wherein the capacity of the conventional
- 10 internal memory is 256-bytes.
8. (currently amended) The method of claim 1 wherein data, registers, and stacks share the conventional internal memory.
- 15 9. (currently amended) The method of claim 1 wherein the extended internal memory is only for storing stacks.
10. (original) A chip for executing the method of claim 1.
- 20 11. (new) The method of Claim 1 further comprising setting an initial position of a stack pointer of the stack equal to an ending address of the conventional internal memory.
12. (new) The method of Claim 1 further comprising providing a stack pointer register for pointing to a first stack, and providing a second stack pointer for pointing to a second
- 25 stack.
13. (new) The method of Claim 12 further comprising increasing a memory address of the stack pointer when data is added to the first stack, and decreasing a memory address of

Appl. No. 10/605,646  
Amdt. dated October 28, 2005  
Reply to Office action of July 28, 2005

the second stack pointer when data is added to the second stack.

14.(new) The method of Claim 13 further comprising setting an initial address of the first stack pointer equal to an ending address of the conventional internal memory.

5

15. (new) The method of Claim 13 further comprising setting an initial address of the second stack pointer equal to an address next to an ending address of the conventional internal memory.

10 16. (new) The method of Claim 12 wherein the first stack is utilized for storing a program counter parameter for calling for a subroutine or a set of data from the user, and the second stack is utilized for storing a set of parameters sent while the subroutine is called.

15 17. (new) The method of Claim 1, wherein the conventional internal memory has a size limited by a data width of a command set of the processor.